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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,324	01/21/2000	Kristin Butcher	00P7423US	5692

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EXAMINER
WOO, ISAAC M

ART UNIT	PAPER NUMBER
2172	16

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DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/489,324	BUTCHER, KRISTIN	
	Examiner	Art Unit	
	Isaac M Woo	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,38,40-41,44-49,51-52,54 and 56-80* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *61-80* is/are allowed.

6)☒ Claim(s) *4, 38, 40-41-49, 51-52, 54, and 56-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to Applicant's Amendments, filed on April 30, 2004 have been fully considered but they are not persuasive.

2. Claims 4, 38, 40-41, 44-49, 51-52, 54 and 56-80 are pending.

Response to Arguments

Applicant argues that Avargues does not suggest or disclose, "optimization operations to only those numbers included in the given range of numbers and no more" from Remarks on page 15.

However, examiner disagrees. In regard to claims 4 and 38, applicant does not claim where "optimization operations to only those numbers included in the given range of numbers and no more". Applicant's arguments or limitations not present in claims 4 and 38. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Therefore, the arguments are not persuasive.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4, 38, 40, 41, 44-49, 51-52, 54 and 56-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avargues et al (U.S. Patent No. 6,104,701, hereinafter, "Avargues").

With respect to claim 4, Avargues discloses, the method representing a given range of numbers with an optimized set of entries utilizing wildcards (col. 10, lines 1-10), the given range having a beginning number and an ending number (col. 7, lines 5-37), wherein the given range includes a first sub-range, a second sub-range, a third sub-range, and a fourth sub-range, the first sub-range having lower numbers than the second sub-range, which has lower numbers than the third sub-range, which has lower numbers than the fourth sub-range, see (col. 10, lines 4-25, col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8), representing all numbers within the sub-range (subinterval) as entries within the optimized set, see (col. 10, lines 52-63, e.g., 324+ through 325324); and representing and optimizing the sub-ranges (subinterval, sub-subinterval) as a plurality of entries using wildcards within the

optimized set, wherein the optimizing only includes the given range of numbers, see (col. 10, lines 1-67 to col. 11, lines 1-8). Avargues does not explicitly disclose the first, second, third, and fourth sub-ranges. However, Avarsues discloses to represent and optimize the subinterval, sub-subinterval using wildcards, and complete list of resource id's in optimizing the use of wildcards from any range of values four digits, which teaches four digit values create four sub-interval of wildcards ranges, see (col. 10, lines 1-67 to col. 11, lines 1-8). And Avargues teaches 4 sub-ranges (the first, second, third, and fourth sub-ranges) to represent the ranges of number using wildcards, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8). Therefore, it would have been obvious a person having ordinary skill in the art the time invention made to include the first, second, third, and fourth sub-ranges in the system of Avargues to represent the range of numbers as wild card. The wild card representation is saving the data storage to represent each sub-range of numbers.

With respect to claims 38, 49, 54 and 60, Avargues discloses the method, computer system, computer program product and apparatus for representing a range of numbers by an optimized set of hierarchically ordered sub-ranges using wildcard entries, the range having a lowest value range number and a highest value range number, wherein each of the sub-ranges includes a lowest value sub-range number and a highest value sub-range number, the method comprising: (a) generating a set of sub-ranges from the range, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63); and (b) optimizing at least one of

the sub-ranges, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63), the optimizing (b) including at least: (c) determining a difference position between a lowest value sub-range number and a highest value sub-range number (col. 10, lines 25-64, for instance, highest ranges are 32+ to 325324), and (d) optimizing the sub-range based upon the difference position, see (col. 10, lines 25-64). Avargues does not explicitly disclose the maximal degree of optimization of the sub-range. However, Avargues discloses from the example (col. 10, lines 4-63), AB=32 and high is 325324, which teaches that 324000 to 325324 is maximum degree of optimization ranges to be represented as wildcards. Therefore, it would have been obvious a person having ordinary skill in the art the time invention made to disclose the maximal degree of optimization of the sub-range in the system of Avargues to represent the maximum range of numbers as wild card presentation. Because deciding the ranges (maximum degree), is first step for wild card representation, which can optimize data storage to represent each sub-range of numbers.

With respect to claims 40, 51, and 56, Avargues discloses the comparing the lowest value sub-range number and the highest value sub-range number from the most significant digit position to a least significant digit position each, wherein the difference position is a first position where the comparing is different, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claims 41, 52, and 57, Avargues discloses, for the lowest value sub-range number, determining a number of contiguous zero digits from the least significant digit position; dropping off the number of contiguous zero digits from the lowest value sub-range number to form the counting value; and setting the magnitude value as the number of dropped contiguous zero digits, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claim 44, Avargues discloses that the second sub-range lowest value number is one more than a first sub-range highest value number, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claim 45, Avargues discloses that the first sub-range is formed of the range of numbers starting at the lowest value range number up to but not including a first range number divisible by ten, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claim 46, Avargues discloses that the lowest range number is divisible by an n th power of ten, the first n th sub-ranges each have zero entries, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claims 47 and 48, Avargues discloses that each of the range of numbers represents a telephone number and router address, see (col. 2, lines 54-67 to col. 2, lines 1-6).

With respect to claims 58 and 59, Avargues discloses that the counting value is divisible by ten then the set of programming instructions further includes: computer code for forming a new counting value by dropping zero digits off of the counting value starting at a least significant digit position; and computer code for incrementing the magnitude value by the number of dropped zero digits, wherein when the counting value is equal to the limiting value, then the optimizing (d) ends for the sub-range, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

Allowable Subject Matter

5. Claims 61, 71, 75 and 80 are allowed over prior art. The following is a statement of reasons for the indication of allowable subject matter:

Due to claimed features in the amended independent claims 61, 71, 75 and 80, with applicant's persuasive arguments on amendment and the combinations of previously objected claims 39, 50 and 55, the differences between limitations in the claims of invention and Avargues were clarified, the claims 61, 71, 75 and 80, are allowed.

For the claims 61, 71, 75 and 80, the prior art teaches (Avargues et al, U.S. Patent No. 6,104,701) method, system and computer program product and apparatus for representing a range of numbers by an optimized set of hierarchically ordered sub-ranges using wildcard entries, the range having a

lowest value range number and a highest value range number, wherein each of the sub-ranges includes a lowest value sub-range number and a highest value sub-range number, generating a set of sub-ranges from the range, and optimizing at least one of the sub-ranges, the optimizing including determining a difference position between a lowest value sub-range number and a highest value sub-range number indicating the maximal degree of optimization of the sub-range, and optimizing the sub-range based upon the difference position. The prior art does not teach combination steps, as follows:

determining a counting value and a magnitude value wherein the magnitude value indicates a number of wildcards used to optimize the sub-range; truncating the highest value sub-range number based upon the difference position to form a limiting value; adding a wildcard entry to the optimized set based upon the counting value and the magnitude value; incrementing the counting value; and repeating adding a wildcard entry to the optimized set based upon the counting value and the magnitude value; incrementing the counting value until the counting value equals the limiting value or the counting value is divisible by ten.

Claims 62-70, 72-74 and 76-79, dependent claims having further limitations from the amended independent claims 61, 71, 75 and 80, are allowed with the same reasons above.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac M Woo whose telephone number is (703) 305-0081. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

IMW
July 9, 2004

SHAHID ALAM
PRIMARY EXAMINER